

IN THE SPECIFICATION

Please replace the paragraph at page 1, line 13, to page 2, line 3, with the following rewritten paragraph:

Japanese Patent Application Laid-Open No. 8-53117 discloses, for example, a vapor deposition apparatus which uses a CVD (Chemical Vapor Deposition, chemical vapor growing method) method, in particular, a plasma CVD method for vapor depositing a ~~CLD~~ DLC (Diamond Like Carbon) film on an inner surface of a plastic container for the purpose of improving the gas barrier properties and the like. Further, Japanese Patent Application Laid-Open No. 10-258825 discloses a manufacturing apparatus for mass generating a DLC film coated plastic container and a method for manufacturing the same. Further, Japanese Patent Application Laid-Open No. 10-226884 discloses an apparatus for manufacturing a DLC film coated plastic container capable of coating the DLC film without mottling to a container having protrusions which protrude from the outer surface to the outside and a method for manufacturing the same.

Please replace the paragraph at page 6, line 15, to page 7 line 9, with the following rewritten paragraph:

The apparatus of the present invention generates a high frequency power conducting body by generating the container external gas as a plasma at the outside of the container. In this system, an electric field in the vicinity of the ~~external~~ internal electrode becomes strong, and a plasma power discharge inside of the container becomes strong. On the other hand, there can occur a case in which an electric field is weak at the outside of the container, and external power discharge is not sufficient depending on the shape of the container. Therefore, it is an object of the present invention to provide magnetic field generating means at the periphery of the outer wall face of the external electrode, thereby increasing a plasma

density at the outside of the container even in such a case. It is an object of the present invention to generate the magnetic field generating means, thereby ensuring improvement of a velocity of CVD film forming on the outer surface of the container or surface modifying and improvement of the outer surface of the container. Further, it is an object of the present invention to increase a plasma density at the inside of the container, thereby ensuring improvement of the velocity of CVD film forming on the inner surface of the container or surface modifying and improvement of the inner surface of the container.

Please replace the paragraph at page 8, lines 18-24, with the following rewritten paragraph:

In addition, according to the manufacturing method of the present invention, it is an object to set an inner wall face of an external electrode which comes into contact with the portion to an insulated state from high frequency power such that a low self bias voltage is applied to the bottom part and body part of the container or to the bottom part of the container, thereby making a film thickness distribution uniform.

Please replace the paragraph at page 8, line 25, to page 9, line 2, with the following rewritten paragraph:

It is an object of the present invention to provide a CVD film coated plastic container manufacturing method capable of forming CVD films at least on the inner surfaces or outer surfaces of a plurality of plastic containers at the same time and ~~capable of forming the CVD films~~ because of duplication.

Please replace the paragraph at page 13, line 20, to page 14, line 9, with the following rewritten paragraph:

A method for manufacturing a CVD film coated plastic container of the present invention is characterized by comprising: accommodating a plastic container in a free space of an external electrode having a hollow shape with bottom, and abutting a mouth part of the plastic container with a mouth part opening provided at a cover for sealing an opening of the external electrode in an intimate contact state such that a container external gas and a container internal gas are not mixed with each other, thereby forming a sealed space with the external electrode and the cover; replacing the inside of the plastic container with a source gas and replacing the inside of the sealed space with a discharge gas; and supplying a high frequency to the external electrode, generating the source gas and the discharge gas as plasmas to form a CVD film on an inner surface of the plastic container and carrying out plasma surface modifying such as prevention of static electricity on an outer surface of the plastic container or improvement of applicability to outer face printing.

Please replace the paragraph at page 14, line 25, to page 15, line 15, with the following rewritten paragraph:

In addition, a method for manufacturing a CVD film coated plastic container of the present invention is characterized by comprising: accommodating a plastic container in a free space of an external electrode having a hollow shape with bottom, abutting a mouth part of the plastic container with a mouth part opening provided at a cover for sealing an opening of the external electrode in an intimate contact state such that a container external gas and a container internal gas are not mixed with each other and disposing an internal electrode at the inside of the plastic container to form a sealed space with the external electrode and the cover; replacing the inside of the plastic container with a discharge gas and replacing the

inside of the sealed space with a ~~raw material~~ source gas; and supplying a high frequency to the external electrode, generating the discharge gas and the source gas as plasmas to form a CVD film on an outer surface of the plastic container and carrying out plasma surface modifying such as sterilization of an inner surface of the plastic container or improvement of wetting properties.

Please replace the paragraph at page 18, line 18, to page 19, line 9, with the following rewritten paragraph:

In the method for manufacturing a CVD film coated plastic container of the present invention, it is preferable that a plurality of plastic containers are accommodated in a free space of an external electrode having a hollow shape with bottom, a mouth part of the each plastic container is abutted with each of a plurality of mouth part openings provided at a cover for sealing an opening of the external electrode in an internal contact state such that a container external gas and a container internal gas are not mixed with each other and an internal electrode is disposed at the inside of each of the plastic containers to form a sealed space with the external electrode and the cover; the inside of the each plastic container is replaced with a container internal gas which is a source gas or a discharge gas and the sealed space is replaced with a container external gas which is a source gas or a discharge gas; a high frequency is supplied to the external electrode, and the container internal gas and the container external gas are generated as plasmas to form CVD films on at least either of inner surfaces and outer surfaces of the plurality of plastic containers at the same time.

Please replace the paragraph at page 19, line 14, to page 20, line 5, with the following rewritten paragraph:

With the CVD film forming apparatus according to the present invention, restriction on the shape of the inner wall face of a free space in the external electrode has been successfully eliminated. That is, a uniform and ~~file~~ fine CVD film can be formed on the wall face of the container by introducing the container external gas. With this CVD film forming apparatus, by making the container internal gas or the container external gas selectable for the source gas or discharge gas, the CVD film has been successfully formed on only the container inner surface, only the container outer surface, or both of the inner surface and outer surface of the container. Further, in the case where the container internal gas or container external gas has been used as a discharge gas, plasma surface modifying on the plastic container wall face can be carried out by a discharge gas generated as a plasma. Furthermore, in a heat insulating bottle having a pressure reducing absorption face as well, film forming has been successfully carried out without worrying about a gap between the inner wall face of the external electrode and the outer wall face of the container.

Please replace the paragraph at page 28, lines 16-27, with the following rewritten paragraph:

Further, in the present invention, the bottom of the external electrode 3 may be formed in a shape shown in FIG. 3. That is, the free space of the external electrode 3 is formed in a shape having the inner wall face which comes into contact along the shapes of the bottom part and body part of the plastic container ~~[[3]]~~ 7 when the plastic container ~~[[3]]~~ 7 is accommodated. By forming this shape, a self bias voltage can be directly applied from the external electrode to the bottom part and body part of the container. Therefore, stable film forming becomes possible without depending on the plasma discharge state at the

outside of the container. In addition, the size in the height direction of the film forming chamber 6 can be downsized.

Please replace the paragraph at page 32, line 23, to page 33, line 9, with the following rewritten paragraph:

The mouth part opening 52 connecting to a accommodating space in the external electrode 3 is provided at the cover 5, and a space 23 is provided at the inside of the cover 5. From the upper part of the electrically conducting member 4b, through the space 23 inside of the electrically conducting member 4b and the mouth part opening 52 of the electrically conducting member 4b and insulating member 4a, the internal electrode 9 is inserted into the free space in the external electrode 3. A proximal end of the internal electrode 9 is disposed at the upper part of the electrically conducting member 4b. On the other hand, a distal end of the internal electrode 9 is provided at the free space in the external electrode 3, and is disposed at the inside of the plastic container 7 accommodated in the external electrode 3.

Please replace the paragraph at page 41, lines 2-12, with the following rewritten paragraph:

The high frequency power source 15 is provided to generate a high frequency wave which is an energy for generating a container external gas and a container internal gas as a plasma. It is preferable that this power source is provided as a transistor type high frequency power source and a high frequency power source for carrying out matching in a variable frequency ~~movable~~ manner or in an electronic manner in order to reduce a time required for plasma fire ignition. The frequency of the high frequency power source is in the range from 100 kHz to 1000 MHz. For example, an industrial frequency of 13.56 MHz is used. A high frequency output is selected as 10 W to 2000 W, for example.

Please replace the paragraph at page 43, line 15, to page 44, line 3, with the following rewritten paragraph:

A description will be given with respect to a ~~capacity~~ container mounting process for mounting a plastic container in the film forming chamber 6. The container outside in the film forming chamber 6 is atmospherically released by opening the vacuum valve 31. The inside of the plastic container 7 is atmospherically released by opening the vacuum valve 17. In addition, the lower external electrode 1 of the external electrode portion 3 is established in a state in which the electrode 1 is removed from the ~~lower~~ upper external electrode 2. A coating free plastic container 7 is installed to be inserted into a space in the upper external electrode 2 from the lower side of the upper external electrode 2. At this time, the internal electrode 9 is established in a state in which the electrode is inserted into the plastic container 7. Next, the lower external electrode 1 is mounted at the lower part of the upper external electrode 2, and the external electrode 3 is sealed by means of the O-ring 8.

Please replace the paragraph at page 50, line 12, to page 51, line 3, with the following rewritten paragraph:

In gas combination 2, a CVD film is formed on a container outer surface, and on the other hand, an inner surface can be subjected to plasma surface modifying. When, for example, an acetylene gas is used as a source gas which has been exemplified previously, a DLC film can be formed on the container outer surface. It becomes possible to ensure gas barrier properties by the DLC film formed on the container outer surface. Further, it becomes possible to achieve lowering of a static ~~electricity~~ frictional coefficient and to prevent a scratch on an outer face. On the other hand, plasma surface modifying on a container internal surface is as follows. That is, when helium, argon, oxygen, nitrogen or the like is used as a

discharge gas of the container internal gas, sterilization of microorganisms can be achieved. This sterilization action is greatly due to ultraviolet active species as well as only plasma active species. By using nitrogen, oxygen, carbon dioxide, or a fluorine, or alternatively, a mixture gas thereof as a discharge gas, polarity ~~die~~ due to reactive plasma processing is introduced, whereby the wetting properties of the container inner surface can be improved.

Please replace the paragraph at page 51, lines 4-17, with the following rewritten paragraph:

In gas combination 3, CVD films can be formed on both of the container internal surface and the container outer surface. When, for example, an acetylene gas is used as a source gas which has been exemplified previously, a fine DLC film having gas barrier properties can be formed on the container inner surface and outer surface. The DLC film with the gas barrier properties is formed on both wall faces of the plastic container, whereby the plastic container with a ultra-high gas barrier properties can be manufactured. In addition, it becomes possible to reduce the DLC film thickness in order to ensure the gas barrier properties on both wall faces, and a film forming time can be reduced. Further, the DLC film is formed on the container outer surface, thereby making it possible to lower a static ~~electricity~~ frictional coefficient and to prevent a scratch on an outer face.

Please replace the paragraph at page 52, line 7, to page 53, line 10, with the following rewritten paragraph:

A PET bottle was used as a plastic container. The height of the PET bottle was 207 mm, the thickness was 0.3 mm, the capacitance of the container was 500 ml, and the inner surface area was 400 cm^2 . The shape of the bottle was defined as a container (carbonation round type) of FIG. 4(a), and the diameter of the body part was 68.5 mm. When the plastic

container was accommodated in an external electrode, a gap between an outer surface of the container and an inner wall face of the external electrode was 1.0 mm. In addition, an interval between an outer surface of a neck part of the container and an inner wall face of the external electrode was 20 mm. Further, a bottle (heat resistance round type) of FIG. 4(e) and a PET bottle of a container (heat resistance rectangle type) of FIG. 4(f) were used. The PET bottle of the container (heat resistance round type) of FIG. 4(e) and that of the container (heat resistance rectangle type) of FIG. 4(f) each have a pressure reducing absorption face or a panel. A carbonation container was formed in a conical shape because an inner pressure of a carbonated gas is present. The heat resistance container has partial recess and protrusion portions at its body part. In the case where the content processed at a temperature of about 80°C to 95°C is charged and sealed in a state in which that temperature is maintained, and is shipped as a product, if the content is cooled up to a normal temperature, it is inevitable that the inside of the container is pressure-reduced, and a change in shape of the container itself occurs. A wall face such as the body part having its recess and protrusion parts denotes a pressure reducing absorption face or a panel. The characteristics of each of the containers of FIG. 4(a), FIG. 4(e), and FIG. 4(f) were summarized in Table 2.

Please replace the paragraph at page 59, line 27, to page 60, line 20, with the following rewritten paragraph:

On the other hand, in Comparative examples 2 and 3, ~~film~~ film forming was carried out in a state in which there does not externally exist an external gas of the container generated as a plasma, the external gas serving as an electrically conducting body. In Comparative example 2, although a gap between a protrusion portion of a pressure reducing absorption face and an inner wall face of an external electrode was 1 mm, a gap between a recess portion of the pressure reducing absorption face and the inner wall face of the external

electrode was in the range of 5.0 mm to 5.5 mm, and a uniform DLC film was not successfully formed. In addition, at the neck part of the container, because a gap of 20 mm exists, a DLC film at this portion was not formed as a fine DLC film. Further, in Comparative example 3, although a gap between a protrusion portion of a pressure reducing absorption face and an inner wall face of an external electrode was 1 mm, a gap between a recess portion of the pressure reducing absorption face and the inner wall face of the external electrode was in the range of 2.5 mm to 5.0 mm, and a uniform DLC film was not successfully formed. In addition, at the neck part of the container, because a gap of 18 mm to 20 mm exists, a DLC film at this portion was not formed as a fine DLC film.